

**WHAT IS CLAIMED IS:**

1. An image sensor module to be electrically connected to a printed circuit board, the image sensor module comprising:

5 a plurality of lower metal sheets arranged in an array, each of the lower metal sheets having an upper surface and a lower surface;

a plurality of upper metal sheets arranged in an array, each of the upper metal sheets having an upper surface and a lower surface, the lower surfaces of the upper metal sheets being stacked on the upper surfaces of the lower metal sheets;

10 an encapsulant for encapsulating the lower metal sheets and the upper metal sheets, wherein the upper surfaces of the upper metal sheets are exposed from the encapsulant, the lower surfaces of the lower metal sheets are exposed from the encapsulant and electrically connected to the printed circuit board, and the encapsulant is formed with a frame layer around the upper surfaces of the upper metal sheets to define a chamber together with the upper metal sheets;

a photosensitive chip arranged within the chamber;

a plurality of wires for electrically connecting the photosensitive chip to the upper surfaces of the upper metal sheets;

20 a transparent layer arranged on the frame layer of the encapsulant to cover the photosensitive chip;

a lens holder formed with a chamber penetrating through the lens holder and an internal thread at a periphery of the chamber, the frame layer being fixed to the lens holder so that the transparent layer is located at a side of the chamber; and

5 a lens barrel arranged within the chamber of the lens holder, the lens barrel being formed with an external thread screwed to the internal thread of the lens holder, wherein the lens barrel is formed with a chamber penetrating through the lens barrel and has a transparent region and an aspheric lens in the chamber from top to bottom.

2. The image sensor module according to claim 1, further comprising a  
10 middle board arranged among and flush with the upper metal sheets, and the photosensitive chip being mounted to the middle board.

3. The image sensor module according to claim 1, wherein the encapsulant is made of industrial plastic material, and the encapsulant and the frame layer are integrally formed.

15 4. The image sensor module according to claim 1, wherein the transparent layer is a piece of transparent glass.

5. The image sensor module according to claim 1, wherein the lens barrel further has an infrared filter under the aspheric lens in the chamber.

6. A method for manufacturing an image sensor module, comprising the  
20 steps of:

providing a plurality of lower metal sheets arranged in an array, each of the lower metal sheets having an upper surface and a lower surface;

providing a plurality of upper metal sheets arranged in an array, each of the upper metal sheets having an upper surface and a lower surface, the lower  
5 surfaces of the upper metal sheets being stacked on the upper surfaces of the lower metal sheets;

providing an encapsulant for encapsulating the lower metal sheets and the upper metal sheets, wherein the upper surfaces of the upper metal sheets are exposed from the encapsulant, the lower surfaces of the lower metal sheets are  
10 exposed from the encapsulant and electrically connected to a printed circuit board, and the encapsulant is formed with a frame layer around the upper surfaces of the upper metal sheets to define a chamber together with the upper metal sheets;

arranging a photosensitive chip within the chamber;

arranging a transparent layer on the frame layer of the encapsulant to cover  
15 the photosensitive chip;

providing a lens holder formed with a chamber penetrating through the lens holder and an internal thread at a periphery of the chamber, the frame layer being fixed to the lens holder so that the transparent layer is located at a side of the chamber; and

20 arranging a lens barrel within the chamber of the lens holder, the lens barrel being formed with an external thread screwed to the internal thread of the lens

holder, wherein the lens barrel is formed with a chamber penetrating through the lens barrel and has a transparent region and an aspheric lens in the chamber from top to bottom.

7. The method according to claim 6, further comprising:

5       arranging a middle board among and flush with the upper metal sheets, and the photosensitive chip being mounted to the middle board.

8. The method according to claim 6, wherein the encapsulant and the frame layer are formed from industrial plastic material by way of injection molding.

9. The method according to claim 6, wherein the lens barrel further has an  
10       infrared filter under the aspheric lens in the chamber.